

# (12) UK Patent Application (19) GB (11) 2 283 997 (13) A

(43) Date of A Publication 24.05.1995

(21) Application No 9418813.3

(22) Date of Filing 19.09.1994

(30) Priority Data

(31) 9319349

(32) 18.09.1993

(33) GB

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(51) INT CL<sup>6</sup>

E04C 2/54

(52) UK CL (Edition N )

E1D DCF2 DDJ2 DF112 D2055 D401 D424

(56) Documents Cited

GB 2275948 A

GB 2267298 A

EP 0089461 A2

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(58) Field of Search

UK CL (Edition M ) E1D DF112 , E1J JGM JGN , E1R

RDT RDX RF RRN RRP RRV RRX

INT CL<sup>5</sup> E04C 2/54 , E04D 3/06 3/08 3/14 3/32 13/15

On-Line Database : WPI

## (54) Installation of roofing panels

(57) An end cap (10) for a ducted plastics panel (11) comprises a channel section member having an intended upper side (12) and an intended lower side (16), the upper side including a coextruded gasket (20), whereby, when the end cap is pushed onto the plastics panel, the gasket lies on the panel surface to limit passage of water past the gasket.

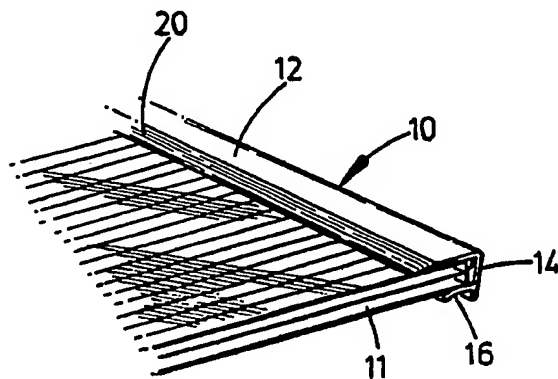


FIG. 2

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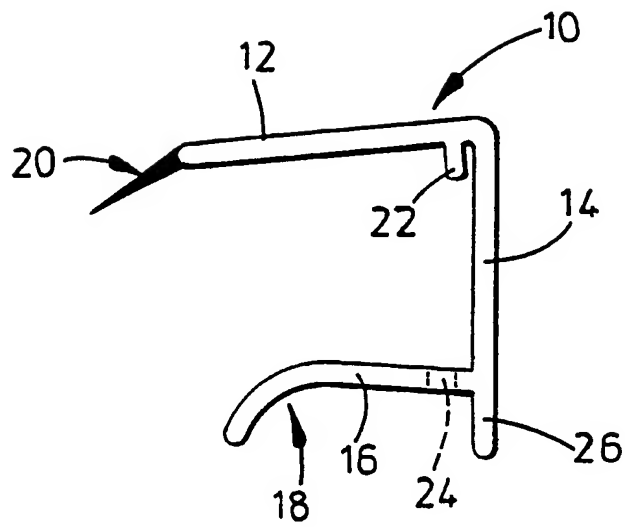


FIG. 1

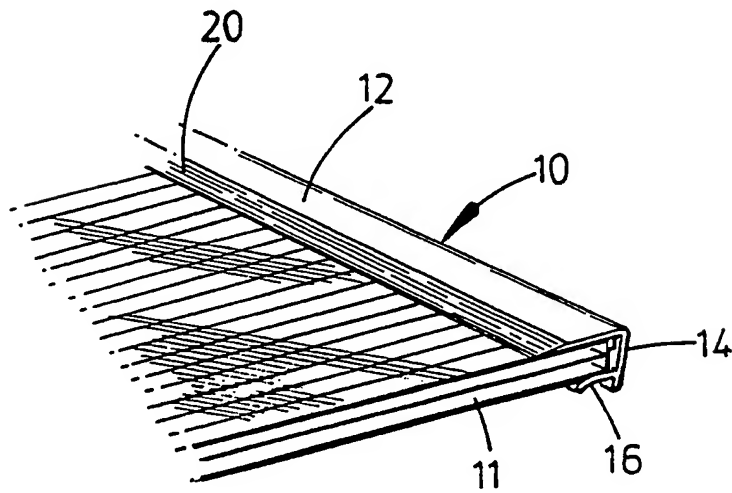
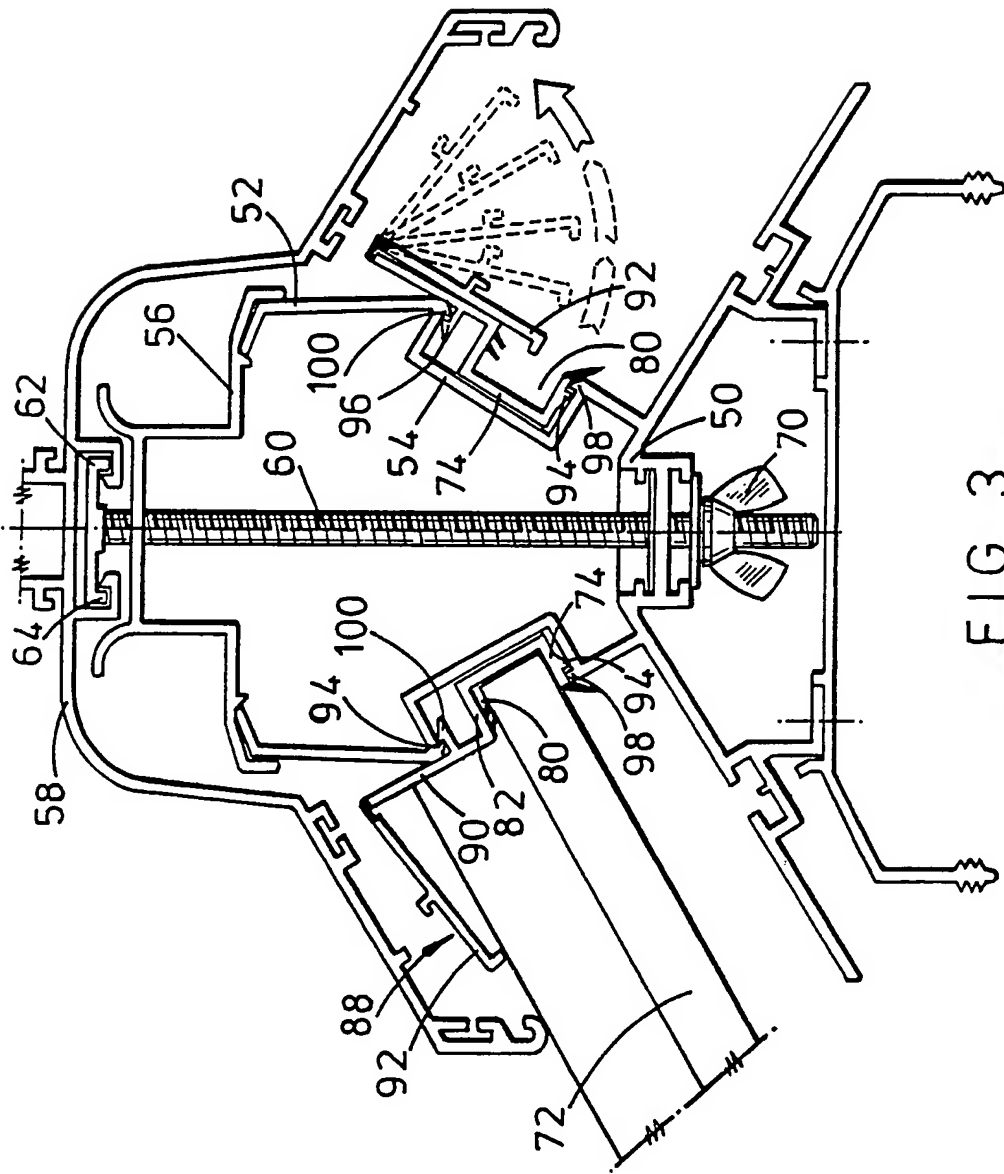


FIG. 2



TITLE: Installation of roofing panels

DESCRIPTION

This invention concerns installation of roofing  
5 panels.

Conservatories and like structures can have a  
roof structure comprising parallel glazing bars  
extending from one or both sides of a ridge member with  
glazing panels supported between the glazing bars. A  
10 common glazing material is polycarbonate sheeting, which  
may have two or three skins joined at their edges and  
intermediate their edges to form longitudinal ducts  
through the panels. When such panels are fitted to a  
conservatory roof, the ends of the panels are sealed  
15 with a breather tape to prevent ingress of water into  
the ducts of the panels. The ends of the panels are  
then covered with a simple polycarbonate cap however,  
polycarbonate panels are generally not as flat as glass  
panes, so that some ingress of water is still possible  
20 between the polycarbonate panels and their end caps,  
which eventually finds its way into the polycarbonate  
panels themselves.

An object of this invention is to provide a means  
for preventing the foresaid ingress of water into  
25 glazing panels of the ducted type.

According to the invention, there is provided an end cap for ducted plastic panels, which comprises a channel section member having an intended upper side and an intended lower side, the upper side including a co-extruded gasket, whereby when the end cap is pushed on to a plastics panel, the gasket lies on the panel surface to limit the passage of water past the gasket.

In a first preferred embodiment of the invention an end cap comprises a channel section member having upper and lower sides which converge over at least part of their length, the upper side having at its free edge a co-extruded gasket and the lower side having its free edge curving away from the upper side over a part of its height. The lower side preferably includes weep holes spaced along its length preferably adjacent to the base of the channel member. Within the channel member, there are preferably provided one or more projections to act as stops for a panel onto which the end cap is fitted. The projection or projections preferably extend downwardly from the upper side of the wall of the channel member, preferably at right angles thereto.

In a second preferred embodiment of the invention an end cap for a glazing panel comprises a channel section for receiving an end of a glazing panel, which section includes one or more co-extruded sealing strips along an upper side wall of the channel. The sealing

strips are preferably directed inwardly. The lower side wall of the channel section preferably has the co-extruded gasket along its free edge.

Extending upwardly from the upper side wall of the channel section, there is preferably a rain baffle. A preferred rain baffle comprises a first web which extends upwardly from the upper side wall of the channel member and a second web which is connected to the first member by a resilient flexible coupling, whereby the second web is normally urged to overlies the first web. In use, the second web is raised until glazing bars are fitted, usually up against the first web, when the second web is released to lie on top of the glazing bars. The two webs together provide a rain baffle which prevents water being driven behind the end cap.

This invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is section through an end cap according to a first embodiment of the invention; and

Figure 2 shows the end cap of Figure 1 fitted to a ducted plastics panel; and

Figure 3 shows a ridge assembly for a conservatory, which includes end caps of a second embodiment of the invention.

Referring to figures 1 and 2 of the accompanying

drawings, an end cap 10 for a polycarbonate glazing panel 13 comprises a channel section member having an upper side wall 12, a base 14 and a lower side wall 16. the upper and lower side walls converge slightly away from the base over a major height of the lower side wall whereafter the lower side wall curves away from the upper side wall at 18.

The upper side wall has along its free edge a co-extruded gasket of rubber or synthetic elastomeric material 20. The gasket narrows towards its free edge and is angled downwards slightly relative to the upper side wall 12. Near its junction with the base, the upper side wall has an internal rib 22, which acts as a stop for the polycarbonate panel 11 pushed into the end cap.

The lower side wall has near its junction with the base a series of spaced weep holes 24 along its length, whereby any moisture entering the end cap can escape under gravity.

The base of the end cap is shown continuing below the lower side wall to provide a foot 26.

In use, the end cap 10 is pushed onto the end of the polycarbonate glazing panel 11. The curving of the lower side wall facilitates the insertion of the glazing panel past the gasket. The end cap is pushed on to the glazing panel until the glazing panel contacts the rib

22. In the fitted position, the gasket 20 lies on the top surface of the glazing panel to prevent passage of water into the end cap. The glazing panel shown is one that does not have a flat top surface but has arcuate sections over each duct. The gasket, therefore, follows the contours of the top surface of the panel.

Turning now to figure 2 of the accompanying drawings, a ridge system for a conservatory comprises a ridge beam 50 supported at each end. The ridge beam is of box section and has side panels 52 indented at 54 to provide locations for glazing panel ends. The box section of the ridge beam is open but covered by a first cap 56 and by a capping 58, which is secured to the beam by means of a bolt 60, which has a head 62 that locates in the formation 64 on the underside of the capping and which passes through the base of the ridge beam to be secured in place by a wing nut 70.

Polycarbonate glazing panels 72 are provided with end caps 74, which are fitted into the indentations of the side panels of the ridge beam. The end caps comprise channel section 80 which has an upper side wall 82 with two sealing strips of rubber or elastomeric material depending therefrom. The lower side wall also has a sealing strip extending from its free edge. Extending at right angles from the upper side wall of the end cap is a rain baffle 88 which comprises a first



web 90 fixed relative to the upper side wall of the end cap and second web 92 which is connected to the first web by flexible resilient material, whereby the second web tends to overlies the first web. On the underside of the lower side wall of the end cap and on the rear face of the first web of the rain baffle are retaining ribs 94 and 96 respectively, which locate behind cooperating ribs 98 and 100 respectively at the mouth of the indentation of the side panel of the ridge beam, whereby the end caps can be pushed-fitted into the indentation of the ridge beam.

In use, the end caps are either fitted to the ridge beam first and the polycarbonate glazing panels fitted to the end caps or the end caps may be fitted first to the polycarbonate panel and then the assembly fitted to the ridge beam. Then, when glazing bars 102 are to be added to secure the glazing panels, the second web of the rain baffle is lifted, so that the glazing bars can be positioned and then released to rest on the glazing bars. The first and second webs of the rain baffle then prevent water ingress passed the end caps by deflecting rain water back on itself to run back down the glazing panels to guttering.

## CLAIMS

1. An end cap for ducted plastics panels, which comprises a channel section member having an intended upper side and an intended lower side, the upper side including a co-extruded gasket, whereby, when the end cap is pushed onto a plastics panel, the gasket lies on the panel surface to limit passage of water past the gasket.
2. An end cap as claimed in claim 1 wherein the channel section member has upper and lower sides which converge over at least part of their length, the upper side having at its free edge a co-extruded gasket and the lower side having its free curving away from the upper side over a part of its height.
3. An end cap as claimed in claim 1 or 2, wherein the lower side includes weep holes spaced along its length.
4. An end cap as claimed in claim 3, wherein the weep holes are adjacent to the base of the channel member.
5. An end cap as claimed in any one of claims 1 to 4, having within the channel one or more projections to act as stops for a panel onto which the end cap is fitted.
6. An end cap as claimed in claim 5, wherein the

projections extend downwardly from the upper side wall of the channel member.

7. An end cap as claimed in claim 6, wherein the projections extend at right angles to the upper side wall of the channel member.

8. An end cap as claimed in claim 1, comprising a channel section for receiving an end of a glazing panel, which section includes one or more coextruded sealing strips along an upper side wall of the channel.

9. An end cap as claimed in claim 8, wherein the sealing strips are directed inwardly.

10. An end cap as claimed in claim 8 or 9, wherein the lower side wall of the channel section has the coextruded gasket along its free edge.

11. An end cap as claimed in claim 8, 9 or 10, wherein extending upwardly from the upper side wall of the channel section is a rain baffle.

12. An end cap as claimed in claim 11, wherein the rain baffle comprises a first web which extends upwardly from the upper side wall of the channel member and a second web which is connected to the first member by a resilient flexible coupling, whereby the second web is normally urged to overlie the first web.

**Relevant Technical Fields**

(i) UK Cl (Ed.M) E1D (DF112); E1J (JGN, JGM); E1R (RF, RDX, RDT, RRN, RRP, RRX, RRV)

(ii) Int Cl (Ed.5) E04C 2/54; E04D 3/06, 3/08, 3/14, 3/32, 13/15

**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE DATABASE: WPI

Search Examiner  
 MR J FULCHER

Date of completion of Search  
 6 DECEMBER 1994

Documents considered relevant following a search in respect of Claims :-  
 1 TO 12

**Categories of documents**

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| <p><b>X:</b> Document indicating lack of novelty or of inventive step.</p> <p><b>Y:</b> Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p><b>A:</b> Document indicating technological background and/or state of the art.</p> | <p><b>P:</b> Document published on or after the declared priority date but before the filing date of the present application.</p> <p><b>E:</b> Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p><b>&amp;:</b> Member of the same patent family; corresponding document.</p> |
|--|---|

Category	Identity of document and relevant passages		Relevant to claim(s)
X,P	GB 2275948 A	(ULTRAFRAME) 14 September 1994, see page 3 lines 7-15 and page 7 lines 1-4	1, 8
X,P	GB 2267298 A	(NEWDAWN) 1 December 1993, see Figure 1	1
X	EP 0089461 A2	(ARTUR FISCHER) see Figure 1	1
X	US 4750127	(HELTERBRAND) see column 6 lines 38-68	1
X	US 3717955	(URBANICK) see Figure 2, gasket 17	1